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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,511	08/16/2001	Felix Mayer	0796/65739	3846

7590

03/06/2003

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EXAMINER

MILLER, TAKISHA S

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

JPY

Office Action Summary

Application No.

09/931,511

Applicant(s)

MAYER ET AL.

Examiner

Takisha Miller

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

P e r i o d f o r R e p l y

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

P r i o r i t y u n d e r 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED Final ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 7 recites the limitation "said measuring duct" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 and 7-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohrer et al. (4,548,078) in view of Jensen et al. (6,085,596).

A. With respect to claim 1, Bohrer et al. teaches a flow sensor (12) comprising a housing with at least two housing sections (10,15) and forming a measuring conduit (19) between at least some of said housing sections (Col. 2, lines 14-15), a semiconductor chip (20) comprising a sensor element (22,24) arranged at a wall of the measuring conduit (19)(Col. 2, lines 55-60), a seal member arranged between two of said housing sections (10,15) and surrounding said semiconductor chip (20)(Fig.1), said seal member pressing against a support (11) formed by at least one of said housing sections, wherein said semiconductor chip (20) is completely arranged within an area enclosed by said seal

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member (Col. 4, lines 40-46). Bohrer et al. also teach at least one strip conductor (14) connected to the semiconductor chip (20) and extending from said semiconductor chip (20)(Fig.1) between said support (11) and said seal member (Col. 4, lines 40-46) and out of housing (10).

Bohrer et al. teach the claimed invention except for explicitly teaching a sealing ring. Jensen et al. teach that is known to use a sealing ring (16,17,18) between two housing sections as set forth at Column 5, lines 47-51 (Fig.3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least one sealing ring as the sealing member between the two housing sections (10,15) in Bohrer et al, as taught by Jensen et al. in order to maintain an airtight configuration and prevent leakage.

B. With respect to claim 2, Bohrer et al. teach the seal member is pressed against said strip conductor (14)(Col. 4, lines 40-46).

C. With respect to claim 3, Bohrer et al. teach the strip conductor (14) is arranged on one of said housing sections (10)(Fig. 1).

D. With respect to claim 4, Bohrer et al. teach a printed circuit board (13) forming at least part of one of said housing sections (10), wherein said strip conductor (14) is arranged on said printed circuit board (13)(Fig.1).

E. With respect to claim 5, Bohrer et al. teach the printed circuit board (13) is arranged between the sealing member and the support (11)(Fig.1).

F. With respect to claims 7-9, Bohrer et al. teach a flow sensor (12) wherein the measuring conduit (19) is formed by a groove (19A) in a surface of at least one of the

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housing sections (10), wherein said sealing member surrounds said groove (19A)(Col. 4, lines 40-46). Bohrer et al. lacks explicitly teaching at least two connecting ducts extending through at least one housing section and communicating with the measuring conduit and a sealing ring arranged in a recess in the surface of the housing section.

Jensen et al. teach at least two connecting ducts (16,17) extending through at least one housing section (11) and communicating with the measuring conduit (Fig.5) and a sealing ring (18) arranged in a recess (14) in the surface of the housing section (11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include at least two connecting ducts extending through at least one housing section as taught by Jensen in order to adequately seal and secure the measuring conduit.

G. With respect to claim 10, Bohrer et al. teach a measuring conduit (19) formed by a groove (19A)(Fig.3) in a surface of a first housing section (10)(Col. 3, lines 44-47) and a semiconductor chip (20) arranged in a recess of a second housing section (15) and flush with a wall of the measuring conduit (19) and contacts said first housing section (10) (Figs. 1,3).

H. With respect to claims 11-13, Bohrer et al. teach a flow sensor (12) comprising a plurality of bumps (17) between said semiconductor chip (20) and a bottom of said recess (Fig.3).

I. With respect to claim 14, Bohrer et al. teach a flow sensor (12) but lacks explicitly teaching a recess comprising a side wall parallel to a measuring conduit, said sidewall ending in recessed sections and forming a straight stop for positioning the semiconductor chip. Jensen et al. teach recess (13) comprising a sidewall parallel to a

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measuring conduit, said sidewall ending in recessed sections and forming a straight stop for positioning the semiconductor chip (1)(see examiner's markings on Fig.5). It would have been obvious to a one of ordinary skill in the art at the time of the invention to include a recess with straight sidewalls as taught by Jensen et al. in order to securely position the semiconductor chip in the housing.

J. With respect to claim 15, Bohrer et al. teach a flow sensor (12) but lacks teaching a sealant paste. Jensen et al. teach a sealant paste/adhesive layer (Col. 6, lines 18-19). It would have been obvious to one having ordinary skill in the art at the time of the invention to include a sealant paste as taught by Jensen et al. in order to simplify and make the apparatus more secure (Col. 6, lines 29-30).

K. With respect to claim 16, Bohrer et al. teach a flow sensor (12) wherein said semiconductor chip (20) comprises a membrane (29) wherein said sensor element (22,24) is arranged at least partially on said membrane (29)(Figs5, 6).

L. With respect to claim 17: Bohrer et al. discloses a flow sensor (12) comprising a semiconductor chip (20) arranged between the entrance (18A) and the exit (18B) of the measuring conduit (19). Changing the location of the semiconductor chip from the location shown by Bohrer et al. to a location on closer to the exit than to the entry, absent any criticality, is only considered to be an obvious modification of Bohrer et al. device that a person having ordinary skill in the art at the time the invention was made would be able to provide using routine experimentation since the courts have held that there is no invention in shifting the position if the operation of the device would not be thereby modified. *In re Japikse*, 86 USPQ 70 (CCPA 1950).

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5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohrer et al. (4,548,078) in view of Jensen et al. (6,085,596) as applied to claim 1 above, and further in view of Araki (5,396,795). Bohrer et al. as modified teach the claimed invention except for a flexible support foil wherein strip conductors are arranged. Araki teaches a flexible support foil (17) wherein strip conductors (18) are arranged (Fig.1A)(Col. 4, lines 9-12). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Bohrer et al. in view of Jensen et al. to include a flexible support foil as taught by Araki in order to adequately protect the conductive leads.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bohrer (4,829,818) teaches a flow sensor housing with semiconductor chip.

Miura et al. (4,677,850) teach a semiconductor flow rate detecting apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Miller whose telephone number is (703) 305-4969.

The examiner can normally be reached on Monday - Friday. (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Takisha Miller
Examiner
Art Unit 2855

TM
March 4, 2003



HARSHAD PATEL
PRIMARY EXAMINER